

PATENT/Docket No. PC11050A

Serial No. 09/989933

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Amendments to the Specification

Please replace lines 27-34 on page 2 with the following amended paragraph:

US Patent Nos. 6,168,942, 6,410,032 and 6,410,299 have described that the N^{pro} coding sequence or the N^{pro} protein of BVDV is not required for virus replication. These patents have described the generation of an attenuated BVD virus "BVDdN1", in which the entire coding sequence for the N^{pro} protein has been deleted from the viral genome. BVDdN1 is infectious in tissue culture and elicits virus neutralizing serum antibodies when vaccinated into cows. Although BVDdN1 can be used as a vaccine against BVDV, BVDdN1 grows in tissue culture at a rate 2-log slower than the parent wild type virus, making the large-scale production of BVDdN1 difficult.

Please replace lines 13-23 on page 5 with the following amended paragraph

It has been shown in US Patent Nos. 6,168,942, 6,410,032 and 6,410,299, that the N^{pro} coding sequence or the protein of BVDV is not essential for replication of the virus. An attenuated BVDV virus ("BVDdN1") has been described therein which carries a deletion of the full coding sequence for N^{pro} in the viral genome. BVDdN1 is less infectious than the parent wild type virus and elicits virus neutralizing serum antibodies when vaccinated into cows. The entire disclosure of US Patent Nos. 6,168,942, 6,410,032 and 6,410,299 are incorporated herein by reference. Although BVDdN1 can be used as a vaccine against BVDV, BVDdN1 grows in tissue culture at a rate 2-log slower than the parent wild type virus, making the large-scale production of BVDdN1 difficult. Furthermore, the attenuated BVD virus of the present invention replicates faster than the BVDdN1 which provides higher immunogenicity for protection.

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